

PRODUCT CUSTOMIZATION KIT AND METHOD OF CUSTOMIZING

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to product customization kits, and methods of customizing products (for example, vending machines). In particular, the present invention focuses on the customization of products using customization kits including components that are not dependent upon the specific dimensions or shape of the products being customized. Such customization kits are easily installable according to the methods of the present invention, and are also easily removable, and do not result in damage to the underlying structure. The kits and methods of this invention are particularly well-suited for use in customizing vending machines.

2. Related Art

It is known in the art to apply exterior coverings to existing products, so as to give the existing product an updated aesthetic appearance or improved functional capabilities. For example, it is common for existing cabinets to be refaced using veneers and replacement doors, without requiring removal of the old cabinets. This allows the aesthetic appearance of the old cabinets to be improved. However, the refacing process is time-consuming and difficult because it requires that the new panels being applied are precisely matched to the underlying cabinets.

It is also known in the vending machine art, in particular, that panels on a vending machine may be removed and replaced to give the vending machine a new appearance or to advertise new products being sold from the machine. However, the design of these known exterior coverings and panels are frequently quite limited

in scope, e. g., the panels being removed from the vending machine are limited to replacement with new panels of the same size and shape, as dictated by the exterior dimensions or shape of the vending machine.

It is helpful to understand the prior approaches to customization of vending machines, in which the chassis both (a) defined the areas that could be customized and those that could not, and/or (b) defined the method of customization that could be performed on each area. For example, Figure 1 illustrates the front of a hot-beverage vending machine chassis that has not been customized. Using the prior approaches, the chassis design dictated that customization only occur in three areas (1-3); all other areas were not intended to be customized using the prior customization approaches. For example, the sliding retractable door 4 and handle located in the beverage well were not intended to be customized. (The illustration in Figure 1 depicts the beverage well with beverage door 4, where only the right portion of the door 4 is shown on the left side of the beverage well.)

Figure 1 illustrates how, under the prior customization approaches, the chassis also dictated the method of customization in each of the three areas (1-3) reserved for customization. In this example, the methods include: openings 1 to attach faceplates, tracks 2 to slide a graphic panel into place, and a flat surface 3 to be painted. (The term graphic panel refers to a flat or curved surface such as sheet of plastic or curved plexiglass with two-dimensional graphics. Graphic panels are typically – but not necessarily – backlit.) Figure 1a, which is a cross-section of the chassis side, depicts a typical method for attaching faceplates: the faceplates have bolts 1a that are inserted through openings 1 in the chassis and are secured from inside the chassis with nuts 1b.

Figure 2 shows a vending machine that has been customized according to the chassis requirements in Figure 1. The faceplates 5 have been attached; the graphic panel 6 has been installed; and paint 7 has been applied. Consistent with the requirements of the chassis, the beverage door 4 has not been customized.

5 Figure 3 shows two vending machines customized using the prior customization approach, and based on the vending machine chassis depicted in Figure 1. The two machines have different faceplates 5, graphic panels 6, and paint schemes 7. The two machines clearly look different, but the scope of the differences is limited because the methods used are the same: faceplates 5 are installed on the top and on the right, graphic panels 6 are provided in the middle, and paint schemes
10 7 are featured on the bottom. Furthermore, there is no customization whatsoever of the beverage door 4 in either machine.

Other prior approaches for modifying the appearance of vending machines have been set forth in the following patents and published applications.

15 U.S. Patent No. 6,474,503 to Davis discloses a lid dispenser. U.S. Patent No. 5,960,988 to Freixas and U.S. Patent No. 3,445,036 to Sturrock disclose straw dispensers.

U.S. Patent No. 6,023,870 to McGarrah discloses a method for displaying and replacing two-dimensional graphic sheets on a specialized vending-machine chassis
20 designed specifically to hold such sheets. In contrast, the envisioned customization kit and method of customizing feature a chassis-independent method, the option to cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. 5,956,876 to Burdette discloses a specialized vending-machine chassis specifically designed to hold replaceable, drawer-like modules. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to
5 cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. 5,509,225 to Minh discloses a method for displaying and replacing two-dimensional graphic panels on a specialized chassis designed
10 specifically to hold such sheets. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. 5,505,333 to Shibazaki discloses a method for displaying and replacing flat graphic panels on a boxy vending-machine chassis designed
15 specifically to hold such panels. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area, the freedom
20 to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. 5,413,245 to Wright discloses a cylindrical or semi-cylindrical chassis designed specifically to accept removable top and bottom endpieces. It does not disclose or suggest the envisioned customization kit and method of
25 customizing, which feature a chassis-independent method, including the option to

cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. 4,973,109 to Diedrich discloses flat decorative panels and a polycarbonate protective cover to be installed on a boxy vending-machine chassis. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. 4,642,959 to Swiech discloses flat, metal-sheet replacement panels for vending machines; graphics are permanently silk-screened onto such panels. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. 4,320,933 to Felix discloses a method for displaying and replacing three identical flat graphic panels for the front and two sides of a boxy vending-machine chassis designed specifically to hold such panels. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Published Application No. 2003/0042268 to Srinivasan discloses a thematic façade that is installed on a vending-machine chassis designed specifically to hold such a facade. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. Des. 410,035 to Johnson discloses a boxy vending-machine chassis with a front display panel with the shape of a soft-drink bottle. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area, the freedom to customize any chassis shape, the option to customize with materials and methods other than two-dimensional graphic sheets, and three-dimensional customization.

U.S. Patent No. Des. 386,791 to Antao discloses a boxy vending-machine chassis with a front display panel with the shape of a soft-drink bottle. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area, the freedom to customize any chassis shape, and the option to customize with materials and methods other than a bottle-shaped panel.

U.S. Patent No. Des. 382,905 to Antao discloses a bank of three boxy vending-machine chassis with front display panels. Together, the three front display panels form shape of a soft-drink bottle. It does not disclose or suggest the envisioned customization kit and method of customizing, which feature a chassis-independent method, including the option to cover 100% of the chassis surface area,

the freedom to customize any chassis shape, and the option to customize with materials and methods other than a bottle-shaped panel.

None of the patents and published applications discussed above address the need for exterior structures capable of being affixed to an underlying support or chassis where the exterior structure is able to update the underlying support
5 aesthetically and/or functionally without being limited to the particular size and shape of the underlying support. Therefore, and particularly in the case of vending machines, there is a need in the art for an exterior customization kit that is independent of the underlying support, and methods for customizing an underlying
10 support to achieve a desired effect, without requiring complicated and costly installation techniques that may be difficult to remove or cause damage to the underlying support.

SUMMARY OF THE INVENTION

15 An advantage of the present invention is the provision of methods and apparatus for customizing the exterior surface of an object, without being limited by the dimensions or shape of the exterior surface of the object, and without requiring installation techniques that damage the underlying surface.

According to a first aspect, a method is provided for customizing a product
20 surface, including the steps of providing one or more panels for attachment to a structural element of the product, providing an attachment mechanism to affix the decorative panels to the structural element of the product, and applying the one or more panels to the structural element of the product using said attachment mechanism in a manner such that the panels are affixed independently of the
25 exterior shape and dimensions of the product.

According to a second aspect, structure and/or steps for altering an external appearance of a product, including one or more panels, built-in installation guides illustrating the proper installation of the one or more panels to an exterior surface of the product, and attachment structures for affixing the panels to the exterior surface, wherein the panels and attachment structures allow the external appearance of the product to be reversibly altered without causing damage to the exterior surface of the product.

According to another aspect structure and/or steps are provided for customizing an exterior surface of a vending machine, including one or more panels selected from the group consisting of decorative panels and functional panels, adapted for application to the exterior surface of said vending machine independent of the shape and dimensions of said exterior surface.

According to still a further aspect, structure is provided for altering an external appearance of a vending machine, including one or more panels having built-in installation guides illustrating the proper installation of said one or more panels to a chassis of said vending machine. Also included are attachment structures for affixing the panels to the chassis. The panels and attachment structures allow the external appearance of the vending machine to be reversibly altered without causing damage to the underlying vending machine chassis.

According to an additional aspect, steps are provided for customizing a vending machine, including providing one or more panels selected from the group consisting of decorative panels and functional panels, for attachment to a chassis of the vending machine, and providing attachment means selected from the group consisting of bolts, screws, nails, rivets, brackets, retaining trim, magnetic fasteners, retaining clips and receptacles, captive fasteners, mating fasteners, spring clips,

cotter pin assemblies, ball and socket fasteners, ball stud and retainer systems, "Christmas-tree" clips, clamps, reclosable fasteners, interlocking fasteners, glues, cements, caulks, double-sided adhesives, transfer adhesives, structural adhesives, catalyzed adhesives, pressure-sensitive adhesives, heat-activated adhesives, putties, velcro, and static-cling systems. The one or more panels are applied to the vending machine chassis using the attachment means in a manner such that the panels are affixed independently of the exterior shape and dimensions of said chassis.

BRIEF DESCRIPTION OF THE DRAWINGS

The advantageous structure and/or function according to the present invention will be more easily understood from the following detailed description of the preferred embodiments and the appended Drawings, as follows.

5 Figure 1 is a front view of a vending machine chassis that has not been customized;

Figure 1a is a side view of a vending machine chassis to which a customization panel is being applied;

10 Figure 2 is a front view of a vending machine chassis that has been customized;

Figures 3a and 3b are front views of customized vending machines;

Figure 4 is a front view of a customization kit and process for customizing according to the present invention;

15 Figure 5 is a cross-section of a beverage vending door on a vending machine having an opening for receiving a customization panel;

Figure 6 is a rear view of customization panel 8, shown in Figure 4;

Figure 7 is a rear view of customization panel 8, shown in Figure 4, and a front view of a vending machine chassis that has not been customized, to which the panel will be applied;

20 Figure 8 is a front view of a vending machine chassis to which a three-dimensional panel has been applied;

Figure 9 is a block diagram illustrating a vending machine showroom plan according to the present invention;

25 Figure 10 is a block diagram illustrating a vending machine distribution warehouse according to the present invention;

Figures 11a and 11b are flow charts demonstrating the points in the distribution chain at which vending machines may be customized;

Figure 12 is a front view of a vending machine that has been customized, showing a gap that may be used to facilitate later removal of customization panels;

Figure 13 is a front view of overlapping customization panels that wrap around the front of the vending machine; and

Figures 14a and 14b are side views of customization panels having two and three-dimensional surfaces applied thereto.

DETAILED DESCRIPTION OF THE PRESENTLY PREFERRED EXEMPLARY EMBODIMENTS

1. Introduction

The present invention will now be described with respect to several embodiments in which underlying chassis of various products are customized using customization kits and methods of customizing according to the present invention. Embodiments will particularly focus on the customization of vending machines, however, it is to be understood that the kits and methods of the present invention find equal applicability to many products beyond vending machines.

In brief, the presently preferred embodiments of the present invention allow for customization of the surface of various products, including vending machines, by applying one or more independently sized and shaped panels to the underlying chassis using methods that require no special training, and allow for ease of removal without damaging the chassis. The panels may incorporate two or three-dimensional surfaces. The panels are particularly well-suited to installation in the field, and may include physical installation guidelines thereon.

2. The Structure and Kit

This invention relates to products that have an exterior applied to an underlying product chassis. As used herein, the term "chassis" refers broadly to the supporting frame of any product. (For example, in the context of vending machines
5 "chassis" refers broadly to the supporting frame of any vending machine, including without limitation all sizes, products vended, and methods of vending.) To be sure, chassis as used herein applies to the frames electrical and mechanical products (such as vending machines, washing machines, and microwave ovens), but the term includes any product that has an underlying structure, such as furniture, bathroom
10 fixtures, and desktop staplers.

As used herein, the term "exterior" refers to all the elements (such as materials, colors, and shapes) that are applied to the chassis. "Exterior" specifically includes without limitation product body, product housing, trim, paints, veneers, and finishes. The application of product exteriors to product chassis fulfills aesthetic and
15 functional goals. Examples of customization to fulfill of aesthetic goals include without limitation a conservative trim on a vending machine, a sleek metallic contoured door on a refrigerator, a matte finish on a washing machine, and a rich veneer on a piece of furniture. Examples of customization to fulfill functional goals include without limitation vandal-resistant panels on a vending machine, weather-
20 resistant veneers on patio furniture, or a red housing on a piece of fire-extinguishing equipment.

For ease of description, the description of this invention will primarily refer to customization of vending machines. However, as mentioned previously, this invention relates to all products that have an exterior applied to an underlying

product chassis, and the use of vending machines as an example shall not limit in any way the scope of this invention.

The envisioned customization kits according to the present invention have one or more of the following features:

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Feature 1: The Customization Kit is Independent of the Chassis.

Figure 4 illustrates how the envisioned customization kit according to the present invention is independent of the chassis shown in Figure 1. The customization kit includes five customizable panels 8-12. Customization panels 8-12
10 are attached directly to the chassis (by means to be described below), regardless of what customization methods were originally intended to be used. Figure 4 also illustrates that the envisioned customization kit according to this invention can implement a far more extensive customization, compared with prior customization approaches. In particular, the envisioned customization kit allows for customization
15 of areas that were not originally intended to be customized, such as the beverage door 4, which is now customized using panel 12.

There are virtually no restrictions on the materials used to create panels 8-12. Examples of such materials include without limitation decorative veneers, metals, ceramics, plastics, woods, textiles, etc. (If necessary, substrates may be added to
20 the panels 8-12.) The panels may be transparent or translucent, allowing light to shine through in case there is backlighting available on the machine (as shown, for example, in Figure 2, which depicts an existing vending machine chassis intended to illuminate the existing graphic panel 6). Furthermore, the panels according to the structure and/or kit of the present invention may feature two or three-dimensional
25 surfaces.

The panels may possess functional as well as aesthetic properties. Examples of functional properties include without limitation: veneers that are resistant to vandalism, napkin dispensers adapted to serve as panels, windows-shaped panels that display advertising, and box-shaped panels that contain literature for the consumer.

The chassis-independence described in this Feature 1 entails at least two distinct advantages over the prior customization approach. First, Feature 1 makes it much easier to implement customization of vending machines. Second, this feature vastly expands the type and degree of customization that can be performed on a vending machine, as an infinitely greater range of materials and designs can be used.

Feature 2: Flexibility in the Chassis Area that the Customization Kit can Cover.

The envisioned customization kit of the present invention can cover from the tiniest spot of the chassis surface area up to fully 100% of the chassis surface area. The panel 12 shown in Figure 4 illustrates that the envisioned customization kit can cover areas that were not originally intended to be customized.

The list of advantages offered by this Feature 2 is too lengthy to enumerate exhaustively here, but four advantages provide a sense of their scope. First, inventory costs are reduced dramatically at every node of the distribution chain. Figure 9 illustrates a showroom for vending machines using the customization structures and/or kits of the present invention. Such a showroom need only feature one standard (working) vending machine chassis with a customization kit, alternative customization kits may be installed on much less expensive dummy (non-working)

vending machine chasses. Second, Figure 10 illustrates a vending-machine distributor warehouse using the envisioned customization kits. Under this model, the distributor invests in far fewer standard (working) vending machine chasses, and only needs to keep in stock an adequate supply of much less expensive envisioned customization kits. Third, manufacturers other than the vending machine manufacturer may also make customization kits, as Figure 11a illustrates. Such third-party manufacturers may not only provide a greater range of choice in customization options, but may also provide customization kits that are aesthetically or functionally superior. Fourth, as Figure 9b illustrates, vending machine operators may upgrade the exteriors of the immense installed base of vending machines that are already operating in the field. Operators may upgrade for a variety of reasons, including without limitation: to refurbish their worn or damaged machines, to protect their machines against inclement weather or vandalism, or place their machines in upscale locations that had previously refused to accept the machines.

Feature 3: Any Chassis Surface May Be Covered by a Plurality of Panels.

To be sure, this means that a plurality of panels may cover an entire face of a boxy chassis (such as that depicted in Figure 1), as Figure 4 illustrates. However, this Feature allows all chassis surfaces to be covered, regardless of shape or size. For example, surface 3 in Figure 1 may be covered by a plurality of panels. Other examples of surfaces that may be covered include without limitation spherical surfaces, cylindrical surfaces, and other surfaces that do not have a clearly defined boundaries. Further, any fractions of such surfaces may be covered.

For any given surface, multiple panels may be laid side by side, optionally interlocking. Panels also may be applied in layers. For example, the vending

machine in Figure 4 shows that panel 9 was layered on top of panel 8, and that panel 11 was layered on top of panel 10.

There are at least four advantages to allowing for layers. First, by layering different shapes and materials, far more elaborate designs can be created. Second, layers allow for additional flexibility. For example, in Figure 4, panel 9 can be replaced easily to advertise seasonal promotions without removing all the other panels, including panel 8. Third, layering allows for very intrusive application techniques, which would cause serious damage if applied directly to the chassis. For example, there are many intrusive techniques that can be used to attach panel 9 to panel 8: these include soldering, bolting, screwing, stapling, and fusing with heat. Additional non-limiting examples of intrusive attachments include those based on the use of screws driven directly into holes provided in the panel being attached (such as self-tapping, thread cutting, or sheet metal screws); use of screws, bolts, studs, nuts, or other retainers fastened through holes provided in the panels; use of screws, bolts, studs, and retainers (retaining clips and receptacles) generally; use of retained nuts on clips or other receptacles; use of captive fasteners, expansion nuts, rivet nuts, or weld nuts; use of self-clinching nuts or studs with mating fasteners; use of rivets (including drive and pop rivets); and locating the panels with hooks, then clamping or locking the panels with an opposing screw or fastener. Fourth, layering allows for elements to be manufactured through complex manufacturing techniques while maintaining simplicity of installation. In Figure 4, for example, even if the process of attaching panel 9 to panel 8 is enormously complex and time-consuming, the installer need only attach panel 8 (using the method depicted in Figure 10) if the two panels are pre-attached before they are shipped to the installer.

Panels may also overlap with one another. The layering above describes the situation in which one panel lies completely on top of another (e.g., panel 9 and panel 8 in Figure 4). In contrast, overlapping refers to the situation in which two or more panels lie partially, but not entirely, on top of one another. (Typically, but not necessarily, the overlap in overlapping panels is formed at installation time.) For example, panels 8 and 10 in Figure 4 are an example of overlapping panels. The upper portion of panel 10 overlaps with the lower portion of panel 8.

There are at least two advantages to overlapping panels. First, aesthetically pleasing designs may be created by overlapping panels. Second, overlapping panels allow the envisioned customization kit according to the present invention to account for variations in the size of the chassis. The variations can be due to slight variations formed during the manufacturing the chassis. Because of overlapping panels 8 and 10, the structure and kit of the present invention can easily accommodate small differences in chassis height due to manufacturing variations. If the overlapping of the panels is substantial, then the panels can even accommodate more significant differences in chassis size that are intended by the manufacturer. For example, the same set of two overlapping panels – particularly if they are of the same material – may be used to customize small, medium, and large vending machine chassis.

According to a further embodiment of the present invention, the intrusive application techniques set forth above for use in attaching one panel to another may optionally also be used to attach panels to the chassis itself, for example, when damage to the underlying chassis is not of concern, or under conditions when more permanent attachment of the panels is desirable.

Feature 4: The Customization Kit May Include Graphic Panels With Three-Dimensional Surfaces.

Instead of using a graphic panel 6 (as Figure 2 illustrates) with two-dimensional graphics, the envisioned customization kit according to the present invention may include a graphic panel with three-dimensional graphics and motifs, which may continue to be backlit. Figure 14 depicts an example of a panel with three-dimensional surfaces 18c; this panel may be installed using various means obvious to those skilled in the art, such as mounting on the tracks 2 shown in Figure 1. The graphic panel may also be attached to a two-dimensional surface which is then installed on the chassis, as 18d illustrates. For comparison, Figure 14 also depicts a flat graphic panel 18a and a curved graphic panel with two-dimensional graphics.

3. The Process

The panels of the customization kits and structure according to the present invention are attached using methods that may include, but are not limited to, the methods dictated by the particular chassis. For example, Figure 5, which shows a cross-section of the beverage door 4 with panel 12, depicts a chassis-independent method. The panel 12 is preformed with pressure clamps 13 at either end which hold the panel 12 in place on beverage door 4.

Figure 6, which shows the reverse side of panel 8 (shown from the front in Figure 4), depicts another such chassis-independent method wherein the panel is affixed to the chassis with strips of heavy-duty, two-sided adhesive tape 14. One side of the adhesive tape 14 is pre-adhered to the reverse of panel, while protective film remains on the tape 14 until the panel 8 is ready to be installed.

Figure 7 illustrates the chassis-independence of the method that Figure 6 depicts. The panel 8 uses none of the three methods dictated by the chassis (attachment through openings 1, graphic panel on tracks 2, or paint 3). Indeed, panel 8 straddles two areas that were originally intended to be customized using different methods (faceplate 5 and graphic panel area 6).

The methods illustrated in Figure 5 and Figure 6 are only two examples of chassis-independent methods. Those skilled in the art will appreciate that these two methods may readily be utilized as a basis for the designing of other chassis-independent methods. Such methods are countless, and include without limitation non-intrusive application methods include those based on glues, cements, structural adhesives (bodied and elastomeric), catalyzed adhesives (such as urethane), silicone adhesives, adhesive putties, pressure-sensitive adhesives, use of opposing fasteners between which panels may be clamped, use of bendable panels that may be clamped onto the machine chassis by applying pressure, use of capturing assembly at opposing edges (such as brackets or other retaining trim attached by one of the non-intrusive application methods discussed herein), and by wedging panels in place. Specific non-intrusive attachments may also include, but are not limited to, bolts, screws, nails, magnetic surfaces, magnetic fasteners, retaining clip and receptacles, captive fasteners, mating fasteners, spring clips, cotter pin assemblies, ball and socket fasteners, ball stud and retainer systems, "Christmas-tree" clips, reclosable or interlocking fasteners, caulk systems, liquid adhesives, velcro, static-cling systems, and heat-activated adhesives.

Feature 5: The Customization Kit Can Be Applied to Any Chassis Shape and Type.

The only requirement is that the panels be attached securely to the chassis. There are two aspects to this Feature. First, the panel exteriors (i.e., the sides of the panels that are visible to consumers) may follow the contours of the chassis, even if the chassis is not flat or regularly shaped. Second, the panel exteriors may not have the same shape as the underlying chassis, as long as they are attached securely. For example, in Figure 8 a three-dimensional panel 15 that clearly has a different shape from the chassis is attached via a small strip of two-sided adhesive tape 14.

Feature 6: The Customization Kit Can Be Installed Without Special Training or Tools.

The methods depicted in Figures 5, 6, and 8 are an example of this Feature. In method of Figure 5, the installer need only slide the panel 12 through the beverage door 4. In the method of Figures 6 and 8, the installer need only peel the protective backing from the two-sided adhesive tape 14 and affix panels 8 and 15 to the chassis of the machine.

Feature 7: The Customization Kit Can Be Installed on Vending Machines on Location in the Field.

This Feature allows the envisioned customization kits of the present invention to be installed without moving the vending machine to perform the customization. The methods depicted, for example, in Figures 5, 6, and 8 can be used for such on-location customization methods.

Feature 8: The Customization Kit Can Be Installed With No Damage to the Vending Machine.

The methods of the present invention depicted in Figures 5, 6, and 8 are three examples of methods that do not cause damage to the vending machine. Other prior installation methods might require that holes be made in the chassis, or that heat be applied, thereby permanently altering the chassis surface. However, according to a further embodiment of the present invention, such intrusive application techniques may optionally also be used to attach panels to the machine chassis, for example, when damage to the underlying machine chassis is not of concern.

Feature 9: The Customization Kit is Easily Removable, With No Damage to the Chassis.

For example, the customization method depicted in Figure 5 is easily reversible: the operator need only remove panel 12 and the beverage door 4 reverts to its original condition.

Another method that is easily reversible is the customization method depicted in Figures 6 and 8. The two-sided adhesive tape 14 is standard tape that both has industrial-strength adhesion and is removable. Depending on the type of two-sided adhesive tape 14 used, the panel 8 could be removed by applying heat, or by adhering a tool to the surface of the panel 8 and pulling. Another method for removing such tape involves sliding a thin wire (such as a piano wire) between the chassis and the panel. This method is significantly aided by designing the panel 8 so that there remains a tiny gap 151 (slightly larger than the circumference of the thin wire), as shown in Figure 12, between the chassis and the panel. (Any tape residue that remains on the chassis could be removed by buffing the chassis without damaging it.)

The advantages of reversibility include, without limitation, the ability to replace an envisioned customization kit that has been vandalized, install a new customization kit with an entirely different look, and even restore the original factory customization kit.

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Feature 10: The Customization Kit May Include Built-In Physical Installation Guides.

Figure 13 illustrates a customization method employing one such foolproof installation guide. Panel 17 is to be installed on the top right corner of the chassis; the top and right side of the panel are designed to wrap around the edges of the chassis to create foolproof installation. Panel 16 is similarly designed to fit seamlessly on the upper right corner of the chassis. Because the two panels are designed to overlap, the two panels will cover the upper portion of the chassis snugly even if the width of the chassis varies from machine to machine.

The layering of panel 11 onto panel 10 in Figure 4 presents another opportunity for including foolproof installation guides. The possibilities are virtually endless. For example, panel 10 could have an indentation in the shape of panel 11, the outline of panel 11 could be drawn onto panel 10, or markers could be placed on panel 10.

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4. Conclusion

Those skilled in the art will appreciate that the conception upon which this disclosure is based may readily be utilized as a basis for the designing of other processes, structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the invention be regarded as

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including equivalent constructions and processes to those described herein insofar as they do not depart from the spirit and scope of the present invention.

It is to be understood that this invention is not limited in its application to the details (including without limitation details regarding construction and arrangements
5 of components) set forth herein. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

The individual components shown in outline or designated by blocks in the
10 attached Drawings are all well-known in the product resurfacing and/or vending machine arts, and their specific construction and operation are not critical to the operation or best mode for carrying out the invention.

While the present invention has been described with respect to what is presently considered to be the preferred embodiments, it is to be understood that the
15 invention is not limited to the disclosed embodiments. To the contrary, the invention is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims. The scope of the following claims is to be accorded the broadest interpretation so as to encompass all such modifications and equivalent structures and functions.

20 All U.S. and foreign patent documents discussed above are hereby incorporated by reference into the Detailed Description of the Preferred Embodiments.

WHAT IS CLAIMED IS:

1. A method for customizing a product surface, comprising the steps of:

providing one or more panels for attachment to a structural element of said

5 product;

providing an attachment means to affix the one or more panels to the structural element of the product; and

applying said one or more panels to said structural element of said product using said attachment means in a manner such that said one or more panels are
10 affixed independently of the exterior shape and dimensions of said product.

2. The method of claim 1, wherein at least one of said one or more panels is decorative.

15 3. The method of claim 1, wherein at least one of said one or more panels is functional.

4. The method of claim 1, wherein said product surface being customized is a vending machine surface.

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5. The method of claim 1, wherein said attachment mechanism is selected from the group consisting of bolts, screws, nails, rivets, brackets, retaining trim, magnetic fasteners, retaining clips and receptacles, captive fasteners, mating fasteners, spring clips, cotter pin assemblies, ball and socket fasteners, ball stud and
25 retainer systems, "Christmas-tree" clips, clamps, reclosable fasteners, interlocking

fasteners, glues, cements, caulks, double-sided adhesives, transfer adhesives, structural adhesives, catalyzed adhesives, pressure-sensitive adhesives, heat-activated adhesives, putties, velcro, and static-cling systems.

5 6. The method of claim 1, wherein the step of applying said one or more panels further comprises the step of attaching said one or more panels as directed by an installation guide provided on at least one of said one or more panels.

 7. The method of claim 6, wherein said installation guide is selected from
10 the group consisting of indentations, outlines, and markers.

 8. A kit for altering an external appearance of a product, comprising:
 one or more panels;
 built-in installation guides illustrating the attachment of said one or more
15 panels to an exterior surface of said product; and
 attachment structures for affixing said panels to said exterior surface,
 wherein said panels and attachment structures allow the external appearance
of the product to be reversibly altered without causing damage to the exterior surface
of the product.

20

 9. The kit according to claim 8, wherein said one or more panels are selected from the group consisting of decorative panels and functional panels.

 10. The kit according to claim 8, wherein said attachment structures are
25 selected from the group consisting of bolts, screws, nails, rivets, brackets, retaining

trim, magnetic fasteners, retaining clips and receptacles, captive fasteners, mating fasteners, spring clips, cotter pin assemblies, ball and socket fasteners, ball stud and retainer systems, "Christmas-tree" clips, clamps, reclosable fasteners, interlocking fasteners, glues, cements, caulks, double-sided adhesives, transfer adhesives, structural adhesives, catalyzed adhesives, pressure-sensitive adhesives, heat-activated adhesives, putties, velcro, and static-cling systems.

11. The kit according to claim 8, wherein said installation guides are selected from the group consisting of indentations in said one or more panels, outlines on said one or more panels, and markers placed on said one or more panels.

12. Apparatus for customizing an exterior surface of a vending machine, comprising:

one or more panels selected from the group consisting of graphic panels, decorative panels, and functional panels adapted for application to the exterior surface of said vending machine independent of the exterior shape and dimensions of said exterior surface.

13. A kit for altering an external appearance of a vending machine, comprising:

at least one panel;

built-in installation guides provided on said at least one panel illustrating how to attach said at least one panel to a chassis of said vending machine; and

attachment structures for affixing said at least one panel to said chassis,

wherein said panels and attachment structures allow the external appearance of the vending machine to be reversibly altered without causing damage to the underlying vending machine chassis.

5 14. The kit according to claim 13, wherein said at least one panel is selected from the group consisting of graphic panels and functional panels.

15 15. The kit according to claim 14, wherein said graphic panels provide an improved aesthetic appearance to said vending machine.

10 16. The kit according to claim 14, wherein said functional panels provide additional functionality to said vending machine.

15 17. The kit according to claim 13, wherein said built-in installation guides are selected from the group consisting of indentations in said one or more panels, outlines on said one or more panels, and markers placed on said one or more panels.

20 18. The kit according to claim 13, wherein said attachment structures are selected from the group consisting of bolts, screws, nails, rivets, brackets, retaining trim, magnetic fasteners, retaining clips and receptacles, captive fasteners, mating fasteners, spring clips, cotter pin assemblies, ball and socket fasteners, ball stud and retainer systems, "Christmas-tree" clips, clamps, reclosable fasteners, interlocking fasteners, glues, cements, caulks, double-sided adhesives, transfer adhesives,

structural adhesives, catalyzed adhesives, pressure-sensitive adhesives, heat-activated adhesives, putties, velcro, and static-cling systems.

19. A method for customizing a vending machine, comprising the steps of:

5 providing at least one panel selected from the group consisting of decorative panels and functional panels, for attachment to a chassis of said vending machine;

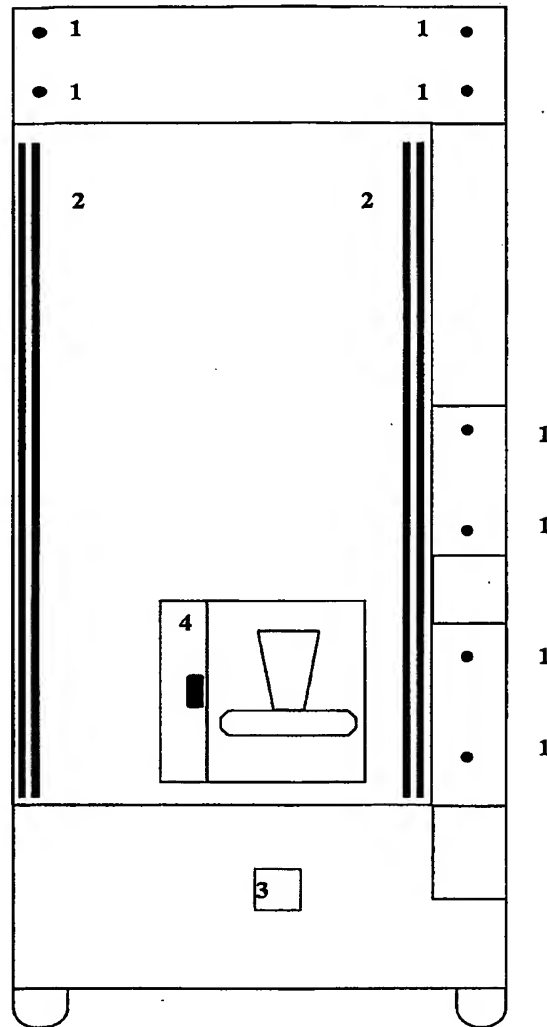
providing attachment means selected from the group consisting of bolts, screws, nails, rivets, brackets, retaining trim, magnetic fasteners, retaining clips and receptacles, captive fasteners, mating fasteners, spring clips, cotter pin assemblies, 10 ball and socket fasteners, ball stud and retainer systems, "Christmas-tree" clips, clamps, reclosable fasteners, interlocking fasteners, glues, cements, caulks, double-sided adhesives, transfer adhesives, structural adhesives, catalyzed adhesives, pressure-sensitive adhesives, heat-activated adhesives, putties, velcro, and static-cling systems; and

15 applying said at least one panel to said vending machine chassis using said attachment means in a manner such that said at least one panel is affixed independently of the exterior shape and dimensions of said chassis.

20 20. The method of claim 19, wherein the step of applying said at least one panel further comprises the step of attaching said at least one panel as directed by at least one installation guide provided on said at least one panel.

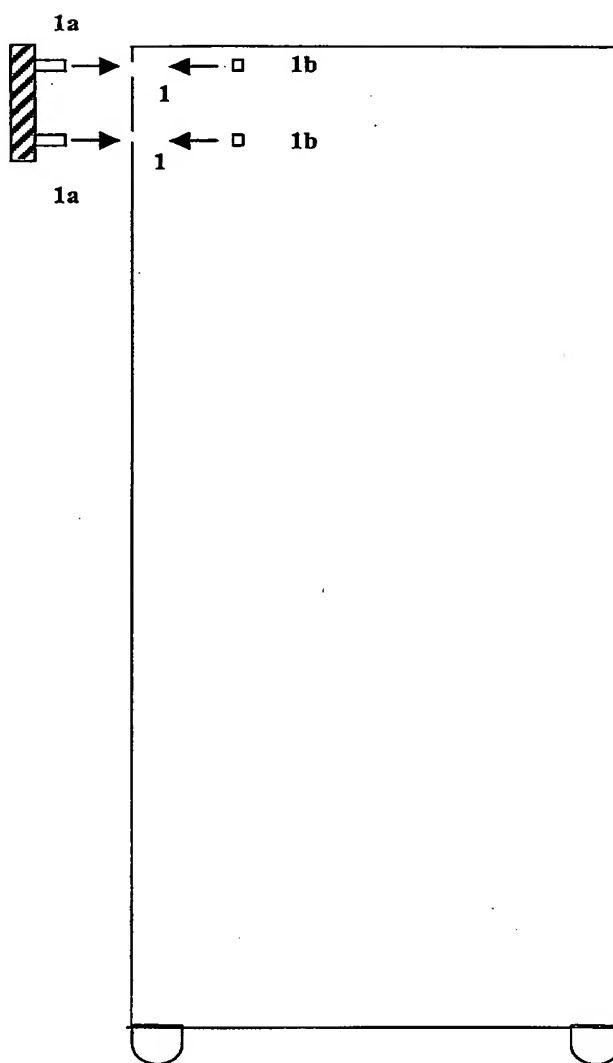
1/15

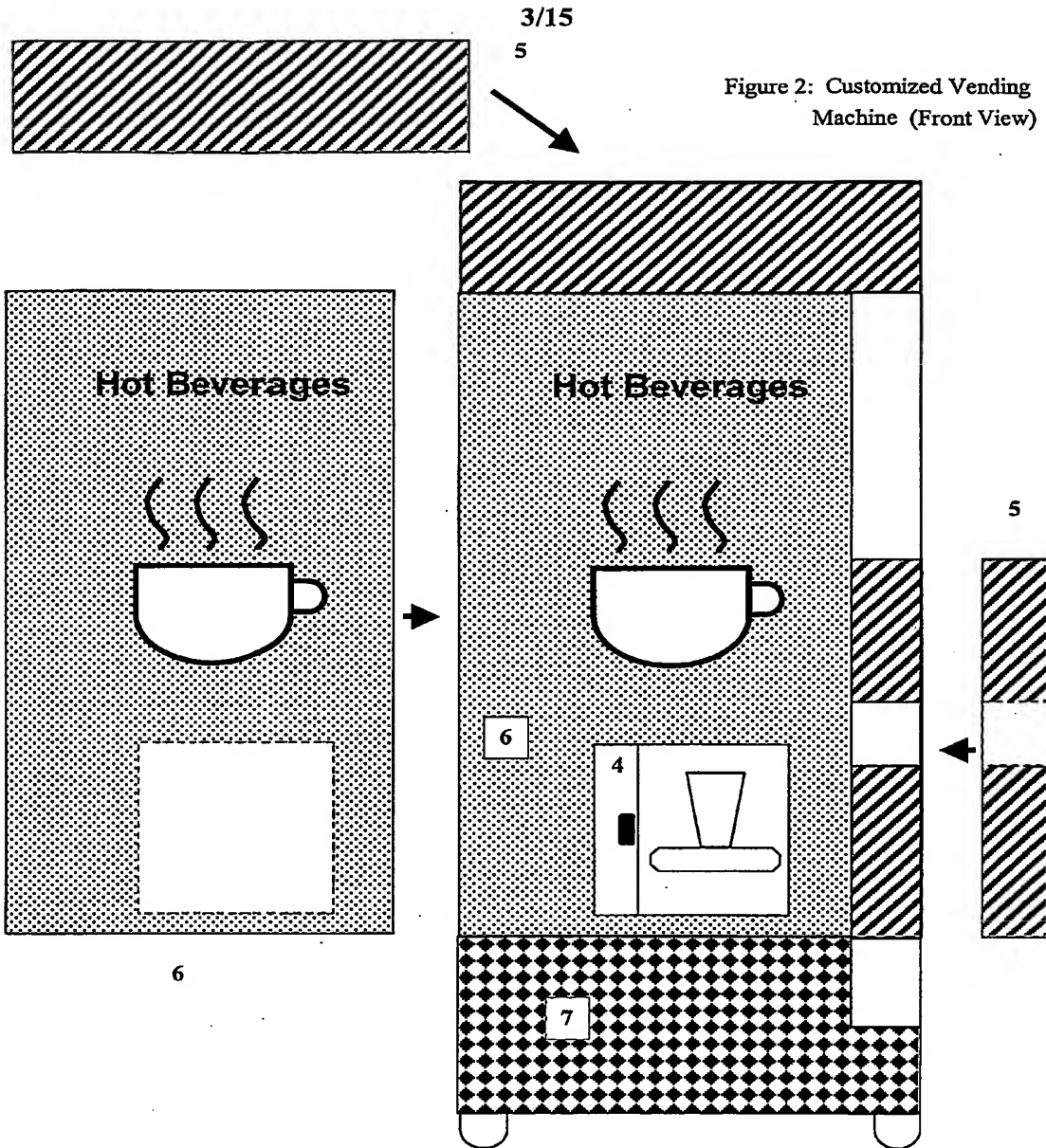
Figure 1: Vending Machine Chassis that has not been Customized (Front View)



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Figure 1a: Vending Machine (Side View)

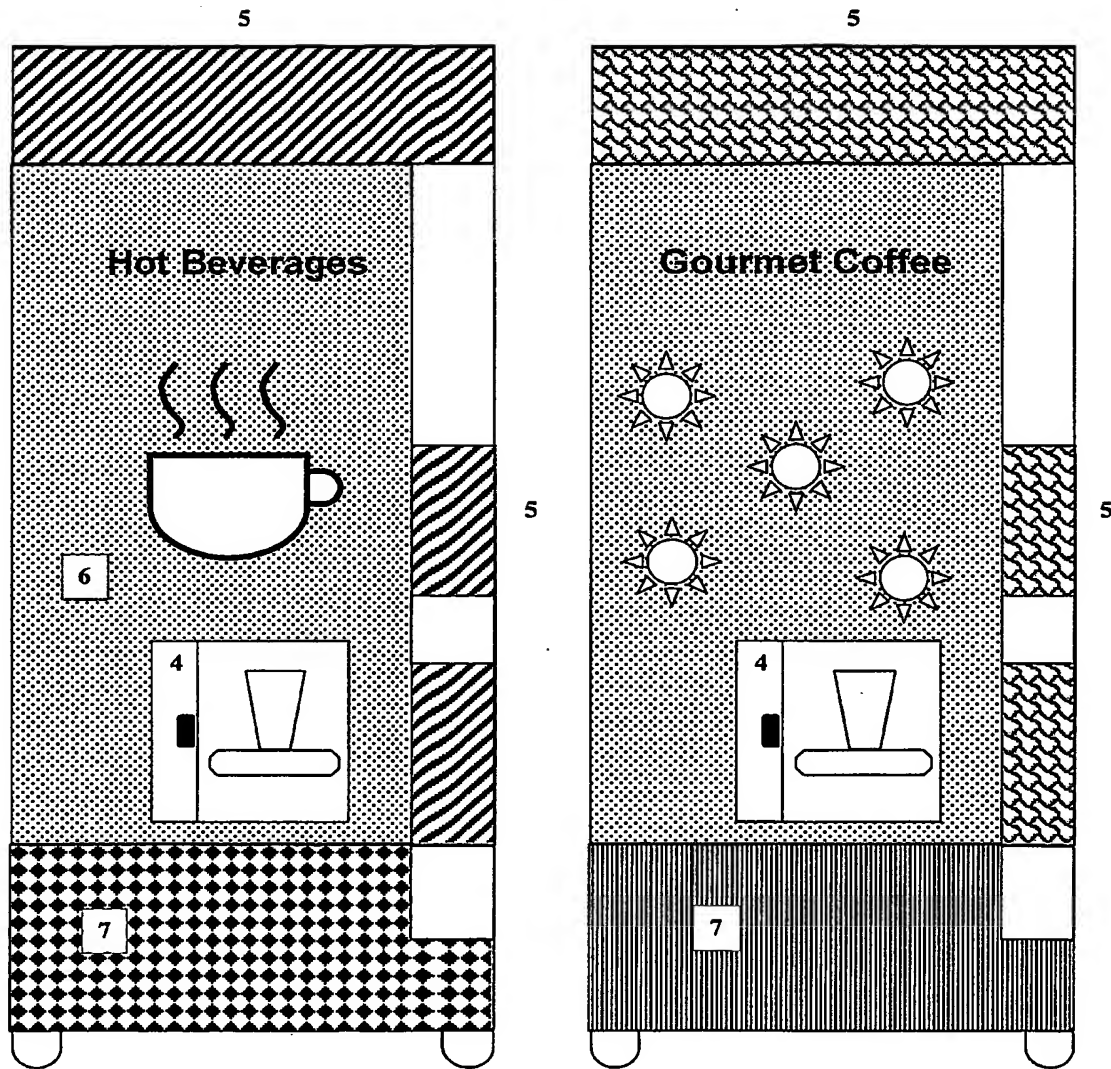




Note: Dashed Lines represent cutouts

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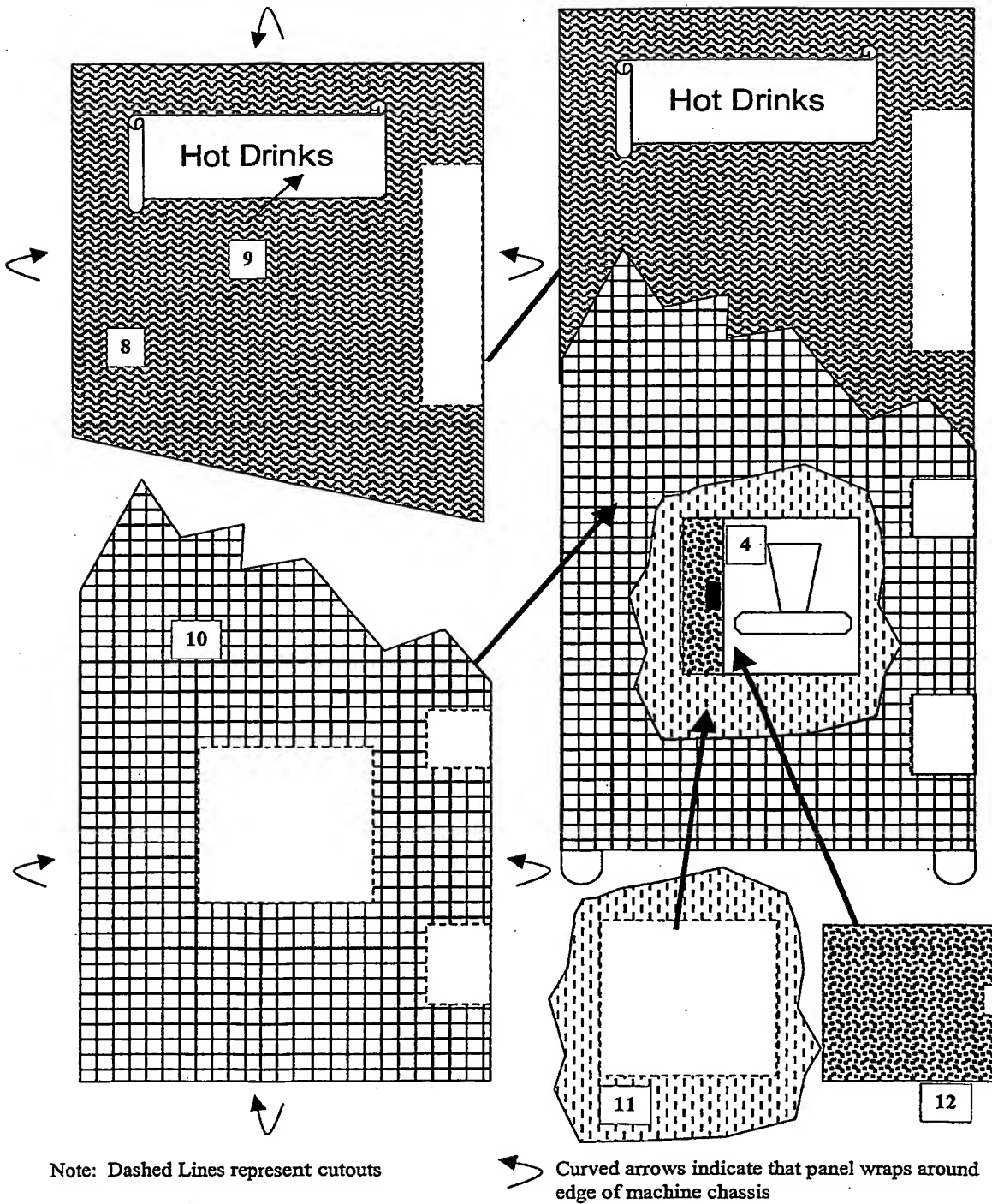
Figure 3: Customized Vending Machines (Front View)



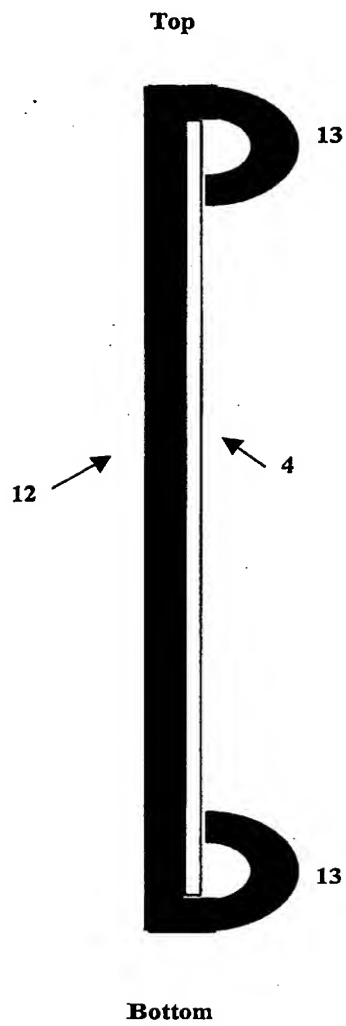
Note: Dashed Lines represent cutouts

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Figure 4: Example of Envisioned Customization Kit and Envisioned Customization Process

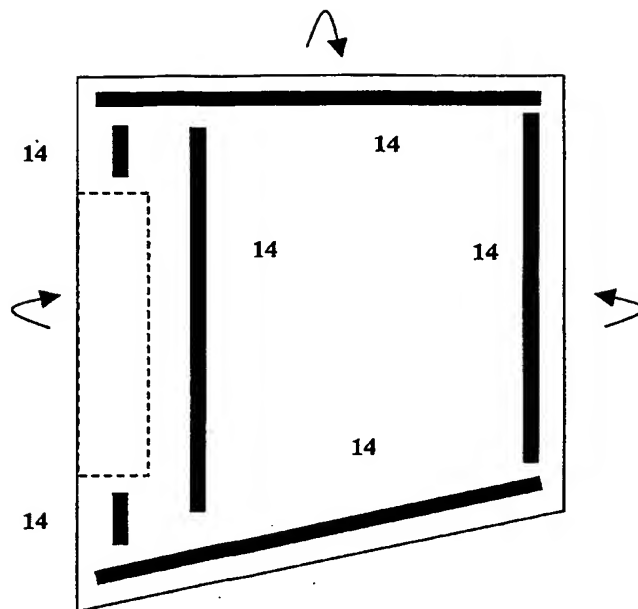


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Figure 5: Cross-Section of Beverage Door with Panel 12



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Figure 6: Reverse of Panel 8

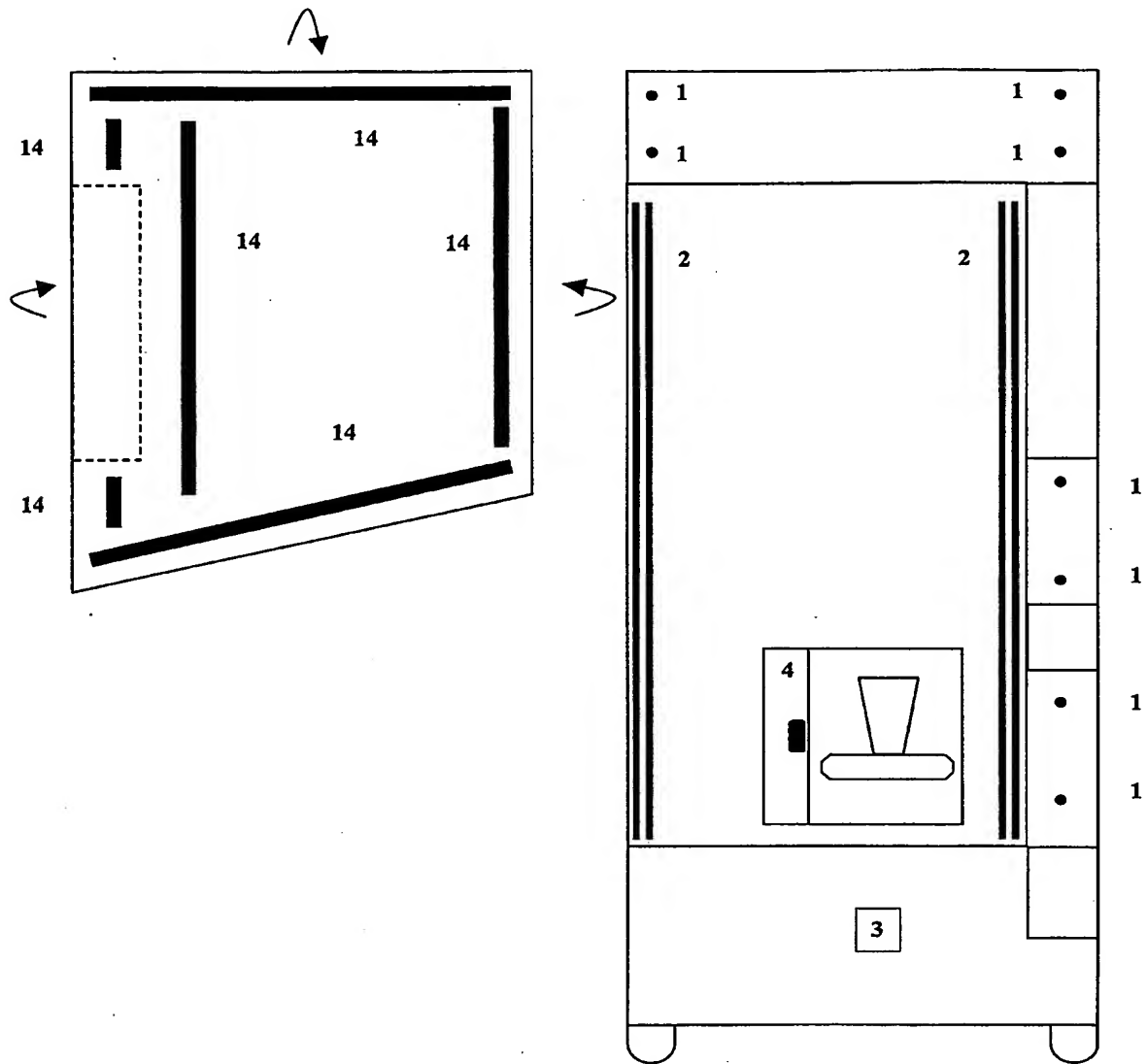


Note: Dashed Lines represent cutouts

Curved arrows indicate that panel wraps around edge of machine chassis

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Figure7: Reverse of Panel 8 and Vending Machine Chassis that has not been Customized (Front View)

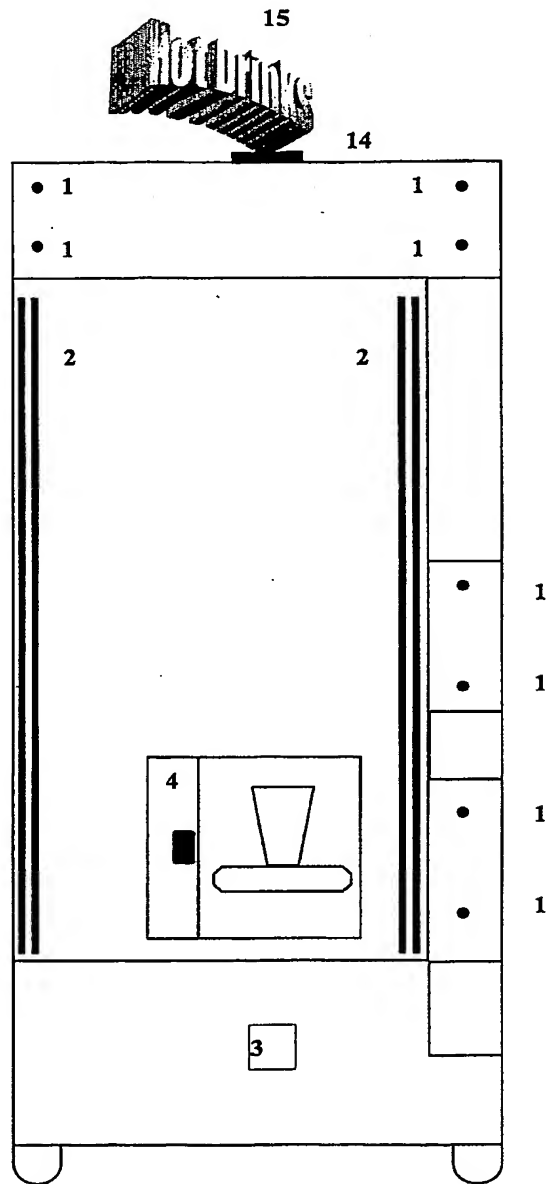


Note: Dashed Lines represent cutouts

Curved arrows indicate that panel wraps around edge of machine chassis

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Figure 8: Three-Dimensional Panel 15 attached to Chassis



Note: Dashed Lines represent cutouts



Curved arrows indicate that panel wraps around edge of machine chassis

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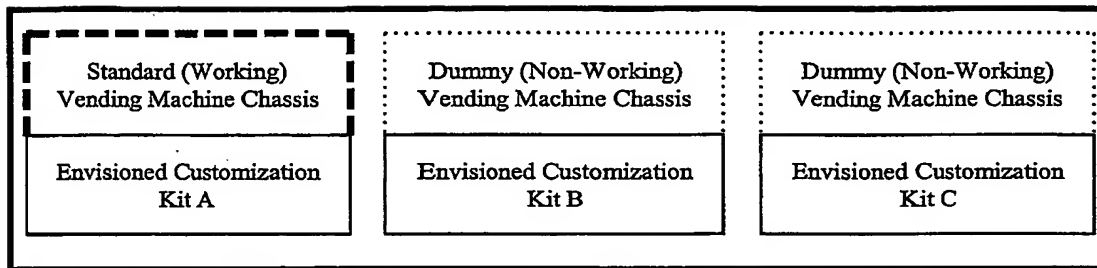


Figure 9: Showroom for Vending Machines using Envisioned Customization Kits



Denotes a Standard (Working) Vending Machine Chassis



Denotes a Dummy (Non-Working) Vending Machine Chassis

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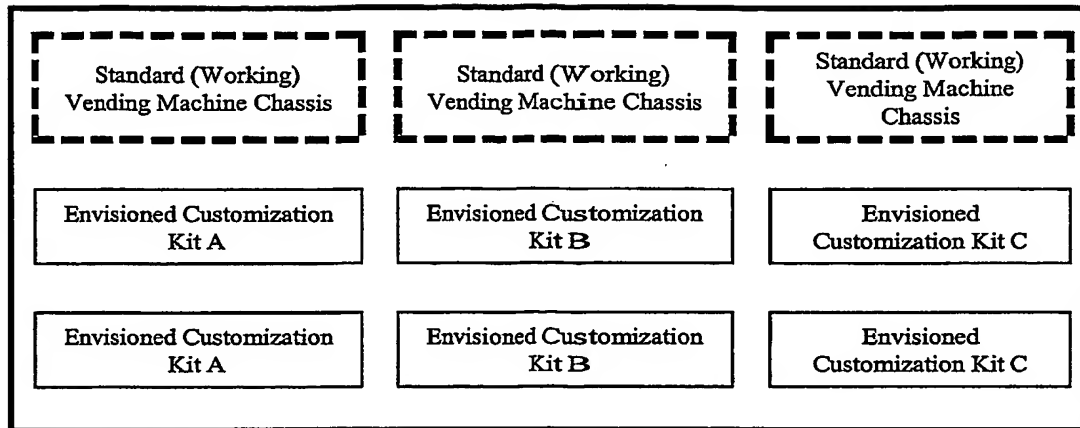


Figure 11: Vending-Machine distributor warehouse



Denotes a Standard (Working) Vending Machine Chassis

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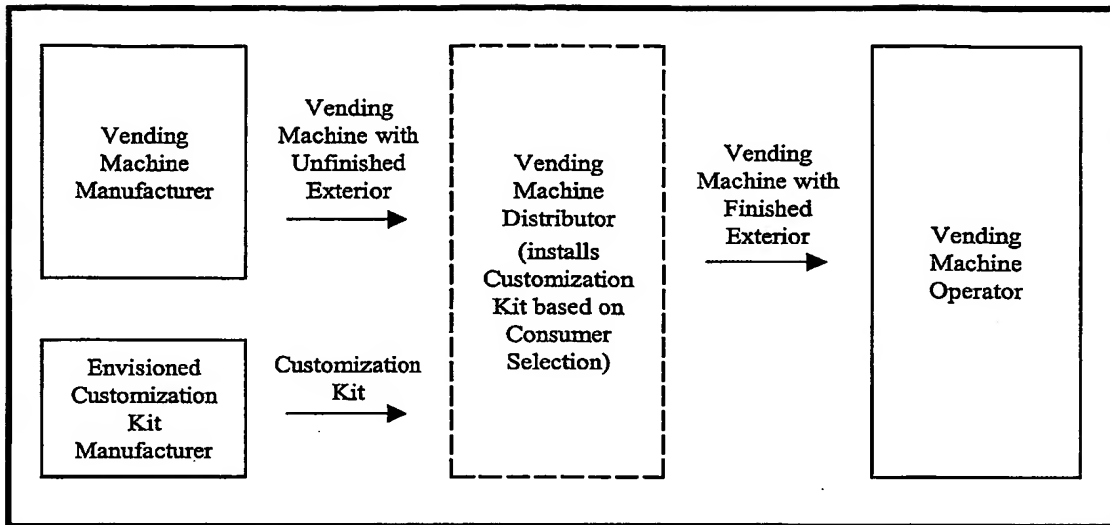


Figure 11a: Customization by Distributor

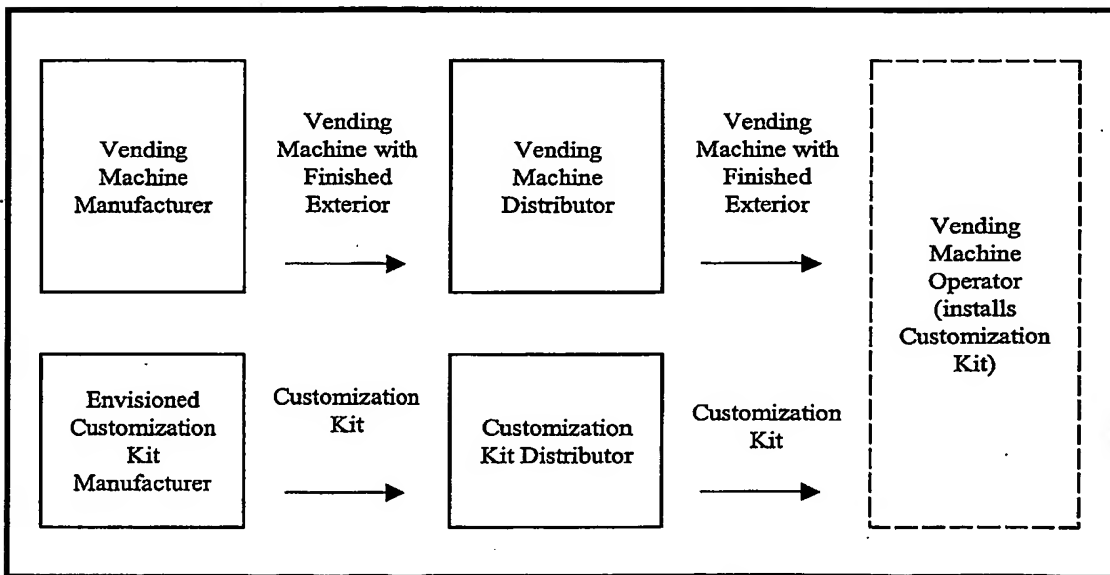
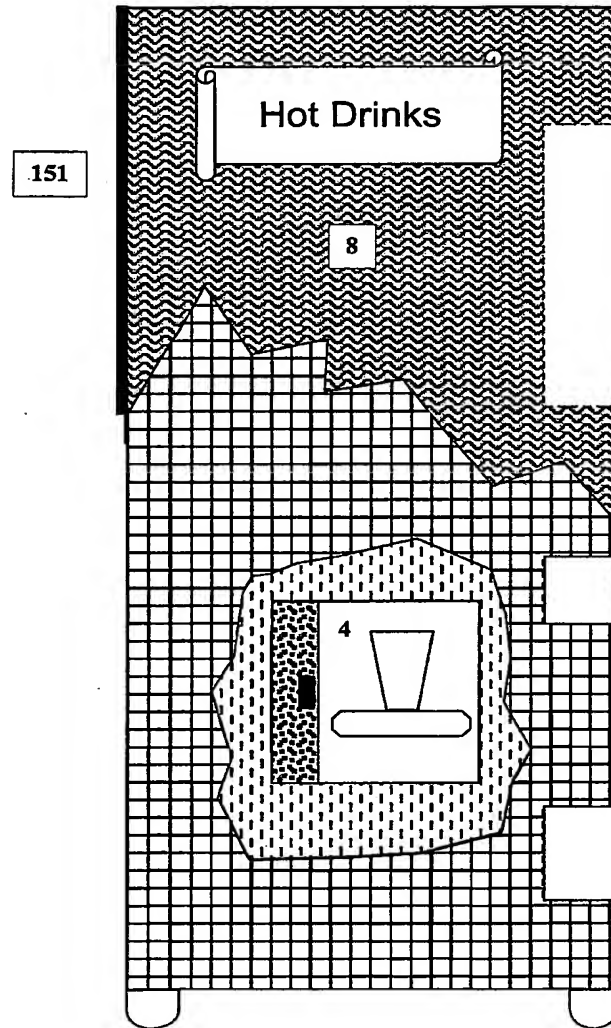


Figure 11b: Customization by Vending Machine Operator

Note: Dashed boxes indicate who installs the Customization Kit

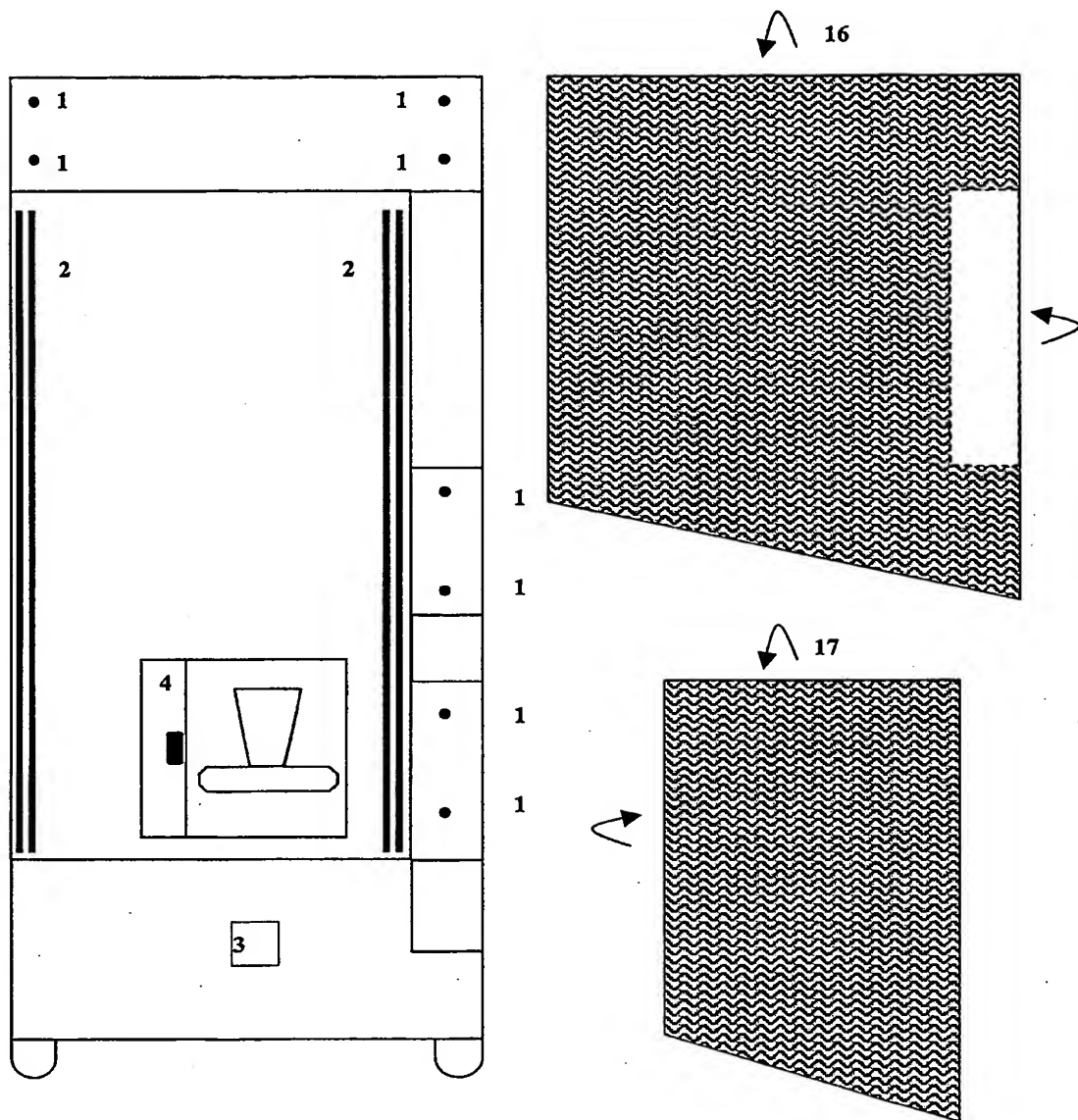
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Figure12: Gap 15 Between Chassis and Panel 8 to Facilitate Removal of Panel 8 with Piano Wire



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Figure 13: Overlapping Panels with Sides Wrapping Around Edge of Machine



Note: Dashed Lines represent cutouts

Curved arrows indicate that panel wraps around edge of machine chassis

Figure 14: Graphic Panels

